UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0200

September 1, 2000

Mr. Lawrence C. Evans
Corps of Engineers - Portland District
ATTN: CENWP-CO-GP
P.O. Box 2870
Portland, Oregon 97208-2870

Re: Calapooya Creek Bridge Scour Repair Project (Corps No. 1999-00033)

Dear Mr. Evans:

Enclosed is a biological opinion prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on Calapooya Creek Bridge Scour Repair in Douglas County, Oregon. The NMFS concludes in this biological opinion that the proposed action is not likely to jeopardize the subject species or destroy or adversely modify critical habitat. Pursuant to section 7 of the ESA, NMFS included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the impact of incidental take associated with this project.

Questions regarding this opinion should be directed to Nancy Munn of my staff in the Oregon State Branch Office at (503) 231-6269.

Sincerely,

William Stelle, Jr.
Regional Administrator

cc: Rose Owens - ODOT
Jim Collins - ODOT (Biological Opinion)
Max Mizejewski - ODOT (Biological Opinion)
Randy Reeve - ODFW (Biological Opinion)

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Calapooya Creek Bridge Scour Project
Oregon Route 138
Douglas County, Oregon

Agency: U.S. Army Corps of Engineers

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: September 1, 2000

Refer to: OSB2000-0200

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I. BACKGROUND

On August 3, 2000, the National Marine Fisheries Service (NMFS) received a request from the U.S. Army Corps of Engineers (COE) for Endangered Species Act (ESA) section 7 formal consultation for the Calapooya Creek bridge scour project (Corps No. 1999-00033). The project will repair the scour at the abutments of the bridge over Calapooya Creek on highway 138W, located about three miles west of Sutherlin in Douglas County, Oregon. Scour at bridge bent two is threatening the integrity of the bent, and must be reinforced with riprap. The project applicant is the Oregon Department of Transportation (ODOT). The ODOT has designed the project and will construct the project with maintenance staff. The project is funded from the ODOT Maintenance budget, which uses state tax dollars. The federal nexus for the ESA consultation is the COE regulatory authority under section 404 of the Clean Water Act.

Calapooya Creek is a tributary of the Umpqua River. The project site is 8.5 miles upstream of the confluence with the Umpqua River. The COE/ODOT is proposing to place 230 cubic yards of class 700 riprap under the west side of the bridge. A toe trench will likely be required to support the riprap. If water is present a cofferdam will be used to isolate the work area from the active channel. The bank slope will be excavated to a shallower slope and trees and shrubs will be planted at the top of the bank.

The ACOE/ODOT determined that the proposed action was likely to adversely affect the Oregon coast (OC) coho salmon which are present in the project area. The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996).

This biological opinion (Opinion) is based on the information presented in the biological assessment (BA) and the result of the consultation process. The consultation process has involved a site visit, and correspondence and communications to obtain additional information and clarify the BA. As appropriate, modifications to the proposal to reduce impacts to the indicated species were discussed and enacted. This has included minimizing the amount of riprap proposed and the addition of plantings to the design.

The objective of this Opinion is to determine whether the action to excavate the stream bank and place riprap is likely to jeopardize the continued existence of the OC coho salmon, or destroy or adversely modify critical habitat.

II. PROPOSED ACTION

The proposed action will place an estimated 230 cubic yards of class 700 riprap under the west side of the bridge. To accomplish this, a cofferdam, or a similar structure, will be installed to isolate the work area from the actively-flowing stream. Next, approximately 270 cubic yards of material will be excavated from the site to create a toe trench and slope the existing stream bank to a 1:1.5 slope. The riprap will be placed once the toe trench and bank slope have been established.

The proposed action also includes planting 35 young trees (alder, oak and bigleaf maple) along the streambank within the action area and the placement of boulder clusters along the base of the revetment. The boulder clusters will break up the flow, help create scour pools and create cover for salmonids.

The contractor will use sediment containment procedures according to Section 170 (Legal Relations and Responsibilities) in ODOT's "Standard Specifications for Highway Construction" (1996) and Section 280 (Erosion and Sediment Control) of the "Supplemental Standard Specifications" (1998).

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The OC coho salmon Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on August 10, 1998 (63 FR 42587). Biological information on OC coho salmon may be found in Weitkamp et al. (1995). Critical habitat was designated for the OC coho salmon on February 16, 2000 (65 FR 7764). Critical habitat for OC coho salmon consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter. Protective regulations for OC coho were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42423).

IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the: (1) Definition of the biological requirements and current status of the listed species; and (2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, and juvenile rearing of the OC coho salmon.

A. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho for ESA protection and also considers new data available that is relevant to the determination (Weitkamp 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environmental.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration, spawning, holding, and rearing. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

B. Environmental Baseline

The current range-wide status of the identified ESU may be found in Weitkamp et al. (1995). The identified action will occur within the range of OC coho salmon. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed

activities include the immediate watershed containing the quarry site and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and streambank of Calapooya Creek extending upstream to the edge of disturbance, and extending 200 feet downstream of project disturbance. Other areas of the Calapooya Creek and the Umpqua River watershed are not expected to be directly or indirectly impacted.

Calapooya Creek is listed on the Oregon Department of Environmental Quality's 303(d) list of water quality limited streams for temperature, dissolved oxygen, bacteria, pH, and flow and habitat modification. Land use in the project vicinity is agriculture. A narrow corridor of alder, oak, willow and maple line the riparian area. Himalayan blackberry and non-native grasses are prevalent.

Based on the best available information on the current status of OC coho salmon range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. River basins have degraded habitat resulting from agricultural and forestry practices, water diversions, urbanization, mining, and severe recent flooding. The following habitat indicators are either at risk or not properly functioning within the action area:, temperature, turbidity/sediment, chemical contamination/nutrients, substrate, large woody debris, off-channel habitat, pool frequency and quality, refugia, streambank condition, floodplain connectivity, peak/base flows, and disturbance history. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of OC coho salmon.

V. ANALYSIS OF EFFECTS

A. Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in NMFS (1996). The effects of actions are expressed in terms of the expected effect - restore, maintain, or degrade - on aquatic habitat factors in the project area.

Approximately 1,940 square feet of riparian and instream habitat will be permanently lost because of the riprap placement. The riparian vegetation removed includes one mature bigleaf maple, various grasses and Himalayan blackberry. While the functional value of this vegetation is not high, it does provide more function than riprap. The riparian vegetation would regulate nutrient and chemical inputs to the stream, provide leaf litter and large wood inputs, provide shade/temperature regulation, and other functions. Riprap placement may also discourage long-term use of the site by juvenile salmonids because of reduced habitat structure and availability of food, and fewer backwater areas that provide a refuge from the current. The proposed planting plan will mitigate for the loss of riparian function; the COE/ODOT proposes to plant 35 young trees (alder, oak and bigleaf maple) along the streambank

within the action area. Also, the placement of boulder clusters along the base of the revetment will break up the flow, help create scour pools and create cover for salmonids.

The excavation of the toe trench and sloping back of the streambank will likely result in increased sediment inputs into Calapooya Creek, and localized increases in turbidity. A cofferdam or similar structure will be used to isolate the work area, which limit the downstream extent of the turbidity. There is still a relatively high likelihood that sediment will end up in the creek, which will negatively impact spawning beds in the reach and could temporarily displace fish from the action area.

The placement of riprap in the stream, construction of the cofferdam, and equipment working in the stream are likely to displace fish, and may harm or kill fish. This impact will be reduced by minimizing the amount of time equipment is in the stream, and stabilizing the action area as quickly as possible. The terms and conditions in this Opinion are intended to further minimize the potential of both direct and indirect take. The terms and conditions limit the contractor's choice in equipment and timing, and restrict the methods that can be used.

The soil stabilization and planting activities will increase the likelihood of a return to riparian function at the site. The disturbed riparian area is all within the critical habitat for OC coho salmon. It will take at least five years of re-growth before function begins to return, and substantially more time before full riparian function returns. During the recovery period, increased sediment and water temperatures are likely to occur at a reach level. At a sub-basin level (Calapooya Creek), these impacts are probably not quantifiable.

For the proposed action, the NMFS expects that the effects will tend to maintain or restore each of the habitat elements over the long term, greater than five years, based on the current condition of the site. In the short term, a temporary increase in sediment entrainment and turbidity, and disturbance of riparian habitat is expected. Fish may be killed, or more likely, temporarily displaced by the riprap placement along Calapooya Creek. The potential effects from the sum total of proposed actions including habitat enhancement activities are expected to restore or maintain the function of coho salmon habitat condition.

B. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for OC coho salmon consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/ organic matter.

The proposed actions will affect critical habitat. In the short term, temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. In the long term, a slow recovery process will

occur as the plants mature. Also, habitat complexity will be increased at the site by the addition of the boulder clusters. The NMFS does not expect that these actions will diminish the value of the habitat for survival of OC coho salmon.

C. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area has been defined as upstream to the edge of disturbance and extending 200 feet downstream of the project. A wide variety of actions occur within the Umpqua River basin, within which the action area is located. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Future COE/ODOT transportation projected are planned in the Umpqua River watershed. Each of these projects will be reviewed through separate section 7 consultation processes and therefore are not considered cumulative effects.

VI. CONCLUSION

After reviewing the current status of Oregon Coast coho salmon, the environmental baseline for the action area, the effects of the proposed Calapooya Creek Bridge Scour Repair Project and the cumulative effects, it is the NMFS biological opinion that this project, as proposed, is not likely to jeopardize the continued existence of the Oregon Coast coho salmon, and is not likely to destroy or adversely modify designated critical habitat. This conclusion is based on findings that the proposed action will use of soil stabilization and revegetation techniques to restore the slope in addition to the riprap.

VII. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS does not request any conservation recommendations for this action.

VIII. REINITIATION OF CONSULTATION

This concludes formal consultation on the Calapooya Creek Bridge Scour Repair Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal

agency involvement or control over the action has been retained or is authorized by law and if: 1) The amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or 4) a new species is listed or critical habitat is designated that may be affected by the action. In instances
where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

IX. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW 1996. Database -- Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. (rainbow.dfw.state.or.us/ftp/).

Weitkamp, L.A., T.C. Wainwright, G.J. Brant, G.B. Miller, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status Review of Coho Salmon from Washington, Oregon, and California. U.S.Department of Commerce, NOAA Technical Memo. NMFS-NWFWC-24, 258 p.

X. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as

breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with
the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of OC coho salmon because of detrimental effects from increased sediment levels (non-lethal) and the potential for direct incidental take during the construction of the cofferdam and placement of riprap (lethal and non-lethal). There is also the potential for harm because of significant habitat modification. Effects of actions such as these are largely unquantifiable in the short-term, and are not expected to be measurable as long-term effects on coho habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to the reach of Calapooya Creek within the area of disturbance.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from project activities within and adjacent to Calapooya Creek, measures shall be taken to limit the duration and extent of ground disturbance and riprap placement, and to schedule such work when the fewest number of fish are expected to be present.

2. To minimize the amount and extent of incidental take from construction activities near the creek, effective erosion and pollution control measures shall be developed and implemented to

minimize the movement of soils and sediment both into and within the river, and to stabilize bare soil over both the short-term and long-term.

3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to avoid impacts to riparian and instream habitat, or where impacts are unavoidable, to replace lost riparian and instream function.

4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures and plantings for site restoration shall be monitored and evaluated both during and following construction.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, COE/ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To Implement Reasonable and Prudent Measure #1, above, the COE/ODOT shall require to complete the following:

    a. All work within the two-year floodplain of Calapooya Creek will be done during the ODFW in-water work window of July 1st to September 15th. This includes work within the active channel and along the streambank.

    b. A cofferdam or similar structure will be used while placing riprap to minimize the potential for take.

    c. Rock will be placed individually and not end dumped. Placement will be performed in the dry as much as possible, and from the top of the bank where possible.

2. To Implement Reasonable and Prudent Measure #2, above, the COE/ODOT shall require to complete the following:

All erosion control and pollution control measures included in the August 2000, BA are included as terms and conditions of this consultation. Based on experiences this year, the NMFS requires ODOT to give particular attention to the following measures:

    a. Vehicle maintenance, re-fueling of vehicles and storage of fuel shall be done at least 150 feet from the 2-year flood elevation or in an adequate fueling containment area. To be considered adequate, the fueling containment area must be a bermed area that is constructed before any refueling occurs. The bermed area will be used for refueling of all heavy equipment. This area will be lined with non-permeable material to catch any spilled material and have a berm large enough to contain 100% of the material. Before

laying down the non-permeable material, all sharp rock will be removed from the area, and 2 to 4 inches of soil will be laid as a base to insure the non-permeable material is not punctured. The non-permeable material will then be laid down, and covered with a 4-inch layer of sand/soil to prevent damage to the non-permeable material from the equipment. If any spills should occur, they will be cleaned up immediately. There will be a minimum 2% grade toward the back of the containment area so that any spilled material will flow to the back of the spill containment area.

b. At the end of each work shift, vehicles shall be stored greater than 150 feet (horizontal distance) from the 2-year flood elevation, or in an area approved by the Engineer.

c. All erosion control devices will be inspected daily during project activities to ensure that they are working adequately. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls will be installed as necessary.

d. If soil erosion and sediment resulting from construction activities is not effectively controlled, the Engineer will limit the amount of disturbed area to that which can be adequately controlled.

3. To Implement Reasonable and Prudent Measure #3, above, the COE/ODOT shall require to complete the following:

a. Boundaries of the clearing limits will be flagged by the Project Inspector. Ground will not be disturbed beyond the flagged boundary.

b. Alteration of native vegetation will be minimized.

c. Riparian plantings will be completed as described in the August 2000 BA.

4. To Implement Reasonable and Prudent Measure #4, above, the ACOE/ODOT shall require to complete the following:

a. All significant riparian replant areas will be monitored for a minimum 3-year period to insure the following:

i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.
ii. Plantings are performing correctly and have an adequate success rate. An adequate success rate is 80%.

b. Failed plantings and structures will be replaced, if replacement would potentially succeed. If not, plantings at another appropriate locations will be done.

c. By December 31 of each year, ODOT shall submit to NMFS (Oregon Branch) a monitoring report that addresses the success of erosion control measures and of the plantings. At a minimum, the monitoring report must include photographs of the erosion control measures and plantings, with a short narrative that addresses riparian function. Monitoring reports will be submitted to:

> Oregon Branch Chief
> National Marine Fisheries Service
> 525 NE Oregon Street, #500
> Portland, Oregon 97232-2737

d. If a dead, sick or injured OC coho salmon is located, initial notification must be made to Nancy Munn, NMFS, telephone: (503) 230-6269. Care will be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured species or preservation of biological material from a dead animal, the finder has the responsibility to carry out instruction provided by Dr. Munn to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.